

REMARKS/ARGUMENTS

With entry of the instant amendment, claims 127, 128, and 137 are amended.

Claims 1-126, 129, 135, and 143-145 were previously cancelled; claims 127, 128, 130-134, 136-142, and 146-155 are pending and under examination.

The amendments to the claims add no new matter. Claims 127 and 128 are amended to delete “at least” from “a composition comprising at least two probes” for clarity in view of the redundancy and not for any purpose relating to patentability.

Applicants thank the Examiner for the interview on January 19, 2011 in which the obviousness-type double-patenting rejection over U.S. Patent No. 6,575,421 was discussed. The substance of the interview was summarized in the Interview Summary mailed January 25, 2011.

Drawings

Applicants are in the process of obtaining the required three sets of color drawings and will file the necessary copies and petition along with the amendment to the specification to insert the required statement.

Claim objection

Applicants thank the Examiner for noting the typographical error in claim 137 where the “q” was inadvertently omitted from “q11”. This has been corrected by the amendment to claim 137.

Rejections under 35 U.S.C. § 103

The rejection of claims 127, 128, 130-134, 136, 139-141, 148, and 149 as allegedly obvious over Bartram *et al.*, *The EMBO J.* 4:683-686, 1985 (“Bartram”) over Hopman *et al.*, *Histochemistry* 85:1-4, 1986 (“Hopman”) in view of Hariharan *et al.*, *The EMBO J.* 6:115-119, 1987 (“Hariharan”), in view of Shtivelman *et al.*, *Cell* 47:277-284, 1986 (“Shtivelman”) in view of Lawrence *et al.*, *Cell* 52:51-61, 1988 (“Lawrence”) is maintained. Applicants respectfully traverse this rejection for reasons of record and for reasons further detailed below.

Bartram employs radioactively labeled probes for *in situ* hybridization for the analysis of a translocation in a Philadelphia chromosome-negative patient. However, Bartram required statistical analysis of the number of silver grains distributed over the chromosomes to determine to which metaphase bands the probes were hybridizing. Bertram provides no suggestion that two different distinguishable labels could be employed at the same time and that the site of binding could be reliably determined. Although Hopman employs two probes, each labeled with a distinguishable label, the target sequences were highly repeated (see, e.g., page 3 of Hopman). Hopman states that middle and low repeated sequences are within the sensitivity of his techniques (Hopman, p. 3), but provides no teaching or suggestion that his technique would be sufficiently sensitive to use two probes together that each detect a unique sequence.

Lawrence is characterized in the rejection as teaching that use of a fluorescent-labeled probe to detect a single copy sequence is possible. The Examiner indicates that the genes detected by Lawrence are integrated into human chromosomes and alleges that the integrated viral genes are therefore human chromosomal genes (see, section 13 of Final Office Action). The Examiner thus contends that this supports the position that Lawrence teaches that it is possible to detect a single copy sequence. Applicants respectfully disagree with the Examiner's analysis of Lawrence's disclosure. Lawrence describes that interpretation of their results must take into consideration the possibility that the integrated viral genome exhibits less condensation than the rest of the chromosomal DNA (p. 58, lines 12-13). Thus, Lawrence acknowledges that the chromosomal architecture of the integrated viral sequences may in fact be distinct from that of the rest of the chromosomal DNA. The Examiner's assertion that the viral genes are human chromosomal genes and that Lawrence teaches that use of a fluorescent-labeled probe to detect a single copy sequence is possible, is therefore inconsistent with Lawrence's disclosure.

Thus, the totality of the teachings of Bertram, Hopman, and Lawrence do not lead one of skill in the art to reasonably expect that the technique of Bertram could successfully be modified to employ two probes, each labeled with a different label, to detect two unique sequences. Hariharan and Shtivelman provide no teachings that would alter this conclusion. The rejection therefore does not establish a proper case that the claims are *prima facie* obvious over the combination of references.

The rejection of claims 127, 132-134, 136-138, 146, and 147 over Bartram, Hopman, Hariharan, Shtivelman and Lawrence in view of Ribeiro *et al.*, *Blood* 70:948-953, 1987 (“Ribeiro”); the rejection of claims 127, 132, and 142 over Bartram, Hopman, Hariharan, Shtivelman, and Lawrence in view of Selden *et al.*, *Proc. Natl. Acad. Sci USA* 80:7289-7292, 1983 (“Selden”); the rejection of claims 127, 128, 148, 151, 152, and 154 over Bartram, Hopman, Harkharan, Shtivelman and Lawrence in view of Lau *et al.*, *Proc. Natl. Acad. Sci USA* 80:5225-5229, 1983 (“Lau”) as evidenced by Westbrook, U.S. Patent No. 6,575,421; and the rejection of claims 127, 128, 148, 150, 153, and 155 as allegedly obvious over Bartram, Hopman, Harkharan, Shtivelman and Lawrence in view of Frischauf *et al.*, *J. Mol. Biol* 170:827-842, 1983 (“Frischauf”) as evidenced by Westbrook, U.S. Patent No. 6,575,421 are also maintained. As Applicants have previously noted, the teachings of the secondary references cited in these rejections do not compensate for the deficiencies of the primary references. Accordingly, the noted claims are unobvious over the combinations of primary and secondary references.

In view of the foregoing, the claimed invention is patentable over the cited art. Applicants respectfully request that all of the rejections under 35 U.S.C. § 103 be withdrawn.

Double patenting rejection

The Examiner contends that should claim 127 be found allowable, claims 128 and 148 will be objected to as being substantial duplicates of claim 127. Applicants will address this objection once allowable claims are identified.

Obviousness-type double patenting rejections

Claims 127, 128, 130, 131, and 148 are rejected as allegedly unpatentable over claims 23, 24, 38, 72, 74, 118, 122, and 123 of Application No. 10/608,092 (the ‘092 application). However, the claims of the ‘092 application cited by the Examiner are no longer pending. Applicants therefore respectfully request that the rejection be withdrawn.

Claims 127, 128, 130, 131, and 148 are rejected for alleged obviousness-type double patenting over claims 3 and 11 of U.S. Patent No. 6,280,929 (the ‘929 patent). Applicants respectfully disagree for reasons provided below.

Claims 127, 128, 130-1334, 136-142, 146-148, and 150-155 are rejected as allegedly unpatentable over claims 3, 7, 8, 10-16, 19, 21, 22, 24, and 26-36 of U.S. Patent No. 6,576,421 (the ‘421 patent). Applicants also respectfully traverse this rejection.

The obviousness-type double patenting rejections applied here are inconsistent with longstanding USPTO policy that methods are patentably distinct inventions relative to compositions. As stated in the MPEP at § 804.II.B.1.

Obviousness-type double patenting requires rejection of an application claim when the claimed subject matter is **not patentably distinct** from the subject matter claimed in a commonly owned patent, or a non-commonly owned patent but subject to a joint research agreement as set forth in 35 U.S.C. 103(c)(2) and (3), when the issuance of a second patent would provide unjustified extension of the term of the right to exclude granted by a patent. See *Eli Lilly & Co. v. Barr Labs, Inc.*, 251 F.3d 955, 58 USPQ2d 1869 (Fed. Cir. 2001); *Ex parte Davis*, 56 USPQ2d 1434, 1435-36 (Bd. Pat. App. & Inter. 2000).

The compositions claimed in the present application are patentably distinct from the method claims of the ‘929 and ‘421 patents.

Similarly, with regard to the ‘421 patent, the method claims are distinct from the compositions claimed here. Further with regard to the ‘421 patent, current claims 127 and 128 of the instant application relate to a composition comprising two probes. Even though two of the three probes are claimed in claims 3, 7, 8, 10-16, 19, 21, 22, 24, and 26-35 of the ‘421 patent, the noted method claims in the ‘421 patent require pairwise use of those two probes and a third probe not disclosed in the present application, and analysis of all results together.

Applicants further note that claims 1-8 of the ‘421 patent are generic. They involve the use of three probes to detect a chromosomal translocation associated with cancer. They do not necessarily employ two probes as set forth in the pending claims. Only dependent claims 9-11 of the ‘421 application recite a translocation between human chromosomes 9 and 22, and only dependent claims 16, 21, and 22 recite two specific probes. However, in each of these

claims and in independent method claims 17 and 27, three probes are required. A composition employing two probes is unobvious over the methods employing three probes.

Moreover, the second requirement for obviousness-type double patenting in the MPEP, that “issuance of a second patent would provide unjustified extension of the term of the right to exclude granted by a patent” does not apply to the ‘421 patent claims that require three probes. That method patent did not depend on patentability of the two probes claimed at present, and patenting claims that can employ two probes does not result in unjustified extension of the term of the patent for methods that require three probes. With regard to claim 36 of the ‘421 patent, Applicants will consider disclaiming claim 36 so that all of the claims of the ‘421 patent relate to using three probes.

In view of the foregoing, Applicants request withdrawal of the obviousness-type double-patenting rejections.

CONCLUSION

Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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